AIR CONDITIONING SYSTEMS

Models

V1RFI-30 / V1RFO-30

V1RFI-50 / V1RFO-50

inventor

Your-conditions

Floor standing Unit

Owner's Manual

inventor

Your-conditions

Thank you for choosing INVENTOR air conditioning system. For correct use of this unit, please read this manual carefully and keep it for future reference.

66129903950

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The symbol stands for the items which should be forbidden

The symbol stands for the items which should be followed

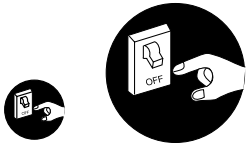
The pictures about the unit in this Instruction may be different from the actual ones.Please be subject to the actual one.

◆ Cautions for Operation

Please read the following carefully before operating.

WARNING

★ Once abnormality like burning smell occurs,please cut off the power supply immediately and then contact with service center .



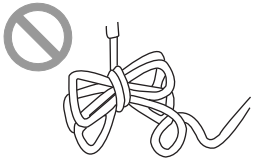
If the abnormality still exists, the unit may be damaged and electric shock or fire may result.

★ Don't operate the air conditioner with wet hand.

Otherwise, it may cause electric shock.

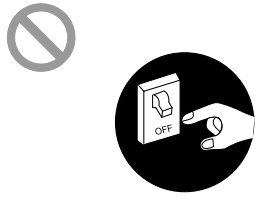
★ Never cut off or damage power cord and signal wire. If they are damaged,replace them with special cord by professionals.

★Special circuit must be adopted for power supply to prevent fire.



Do not use octopus multipurpose plug or mobile terminal board for wire connection.

★ Be sure to pull out the power plug when the air conditioner is not in use for a long time.

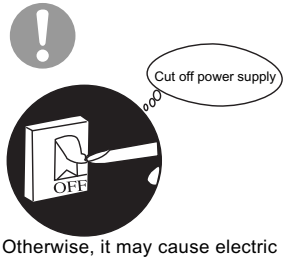


Otherwise, the accumulated dust may cause overheating or fire.

★ Never damage the electric wire or use the one which is not specified.

Otherwise, it may cause overheating or fire.

★ During cleaning, please cut off the power supply.



Otherwise, it may cause electric shock or damage.

★ The power supply must adopt special circuit with protection of air switch and enough capacity.Do not turn on or off the unit frequently to protect the air conditioner.

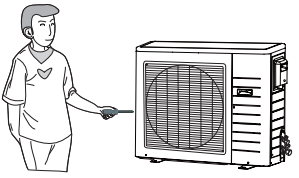
★ The power supply and voltage should keep stable. Electric components are easy to be damaged for high voltage. Refrigeration system will be damaged and compressor and electric components won't operate if voltage is too low.

◆ Cautions for Operation

★ Earthing:the unit must be earthed reliably!The earthing wire should connect with special device of buildings.

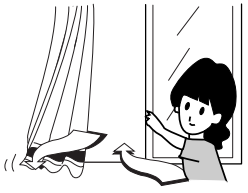
If not, please ask the qualified personnel to install. Furthermore, don't connect each wire to gas pipe, water pipe, drainage pipe or any other improper places which professional does not recognize.

★ Never insert any foreign matter into the air conditioner to avoid damage of the air conditioner. And never insert your hands into the air outlets of indoor and outdoor units.



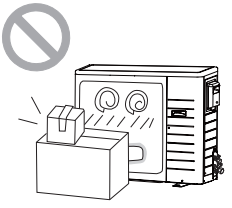
★ The operation of cut-off valve of outdoor unit must be performed by professional personnel in order to avoid damage to compressor for leakage of the system.

★ Don't make windows and doors open for a long time during operation ofthe air conditioner.



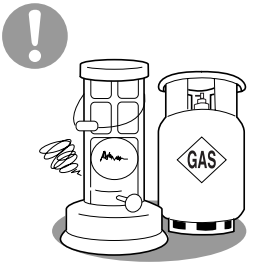
It may reduce efficiency of the unit.

★ Never block the air inlet and outlet of the indoor and outdoor units.



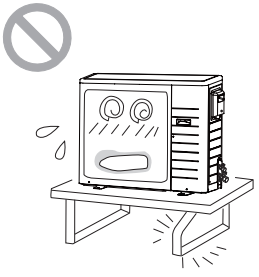
It may reduce efficiency or cause stop of the unit and even fire.

★ Keep pressurized spray ,gas holder and so on away from the indoor unit above1m .



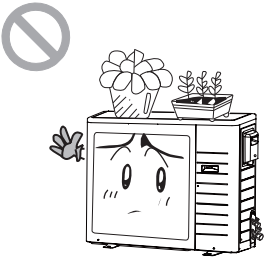
It may cause fire or explosion.

★ Please note whether the installation stand is firm enough or not.



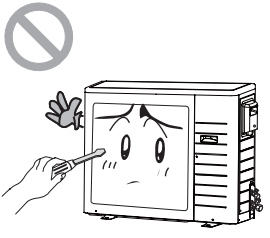
If damaged, it may cause fall of the unit and injury of people.

★ Don't step on the top of the outdoor unit or place anything on it.



There is the danger of fall of things or people .

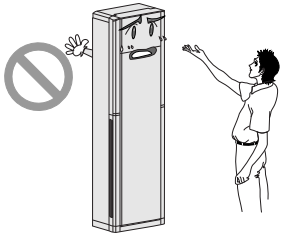
★ Don't attempt to repair the air conditioner by yourself.



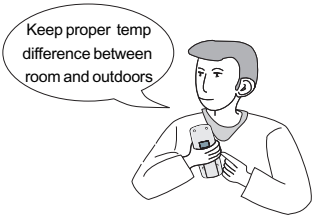
Improper repair may cause electric shock or fire, so you should contact the service center to repair.

Cautions for Operation

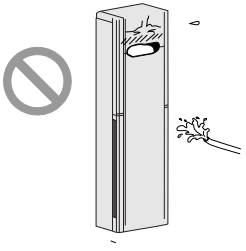
★ Don't insert your hands or stick into the air inlet or outlet.



★ Select the most appropriate temperature.

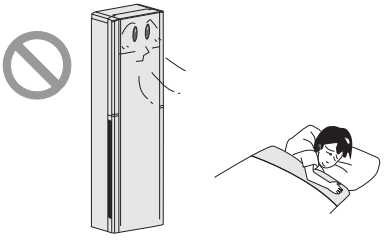


★ Splashing water on the air conditioner may cause electric shock and malfunction.

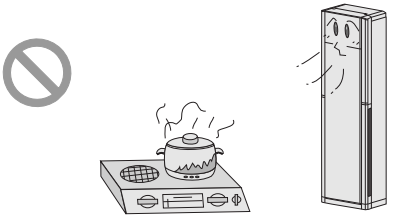


★ Don't blow the wind to animals and plants directly.
It may cause a bad influence to them.

★ Don't apply the cold wind to the body for a long time or set too low temperature.

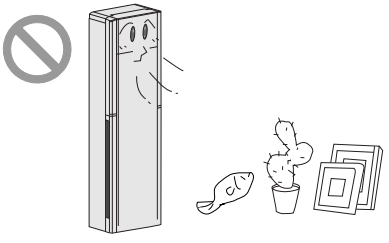


★ Don't place a space heater near the air conditioner.

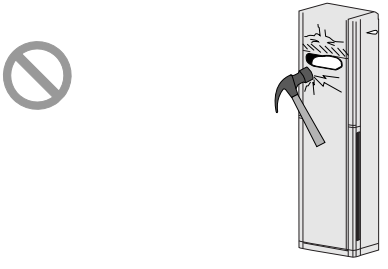


Or CO toxicosis may occur for imcomplete burning.

★ Don't use the air conditioner for other purposes, such as drying clothes, preserving foods, etc.



★ Don't strike the glass door with heavy things to avoid damage.



◆ Notices for Use

Working Principle and Special Functions for Cooling

Principle:

Air conditioner absorbs heat from room and then transmit it outdoors for discharge of it, so that indoor ambient temperature will be decreased.By this principle,its cooling capacity will decrease with the increase of outdoor temperature.

Anti-freezing Function:

If the unit is running under cooling mode at low temperature, the surface of indoor heat exchanger will frost.When the temperature of indoor heat exchanger decreases to -2 ℃or below ,the indoor microcomputer will make the compressor stop to protect the unit.

Working Principle and Special Functions for Heating

Principle:

* Air conditioner absorbs heat from outdoors and transmit into the room for distribution, so that indoor temperature will be increased.

Note:By this principle,heating capacity of the unit will decrease with the decrease of outdoor temperature.

If outdoor temperature gets much lower, please operate with other heating equipments.

Defrosting:

* When outdoor temperature is low with high humidity, the outdoor heat exchanger will frost after the unit runs for a period of time, which affects heating. At this time, auto defrosting function will act and heat running will briefly stop for 5-10min.
* During auto defrosting, both indoor and outdoor fans stop running.
* During defrosting, the outdoor unit may emit vapor,which is due to rapid defrosting,not malfunction.
* The unit will resume heating after defrosting.

Anti-cold Air Function:

Under heating mode, if indoor heat exchanger hasn't reached certain temperature under the following three kinds of states, the indoor fan won't start to avoid blow of cold air (within 90s).

1. At the beginning of heating 2.After auto defrosting 3.Heat at ultra-low temperature

◆ Notices for Use

★ **Condition that unit can't normally run**

The protection devices may be active or inactive in certain temp range of the following table.

"HEAT" running	Outdoor temp above 24 ℃	"COOL" running	Outdoor temp above 48 ℃	"DRY" running	Outdoor temp below 18 ℃
	Outdoor temp below -7 ℃		Outdoor temp below 21 ℃		
	Room temp above 27 ℃				

Under relative humidity above 80% (door and windows open) , long-time cooling or dehumidifying , there will be dew dripping off near the air outlet.

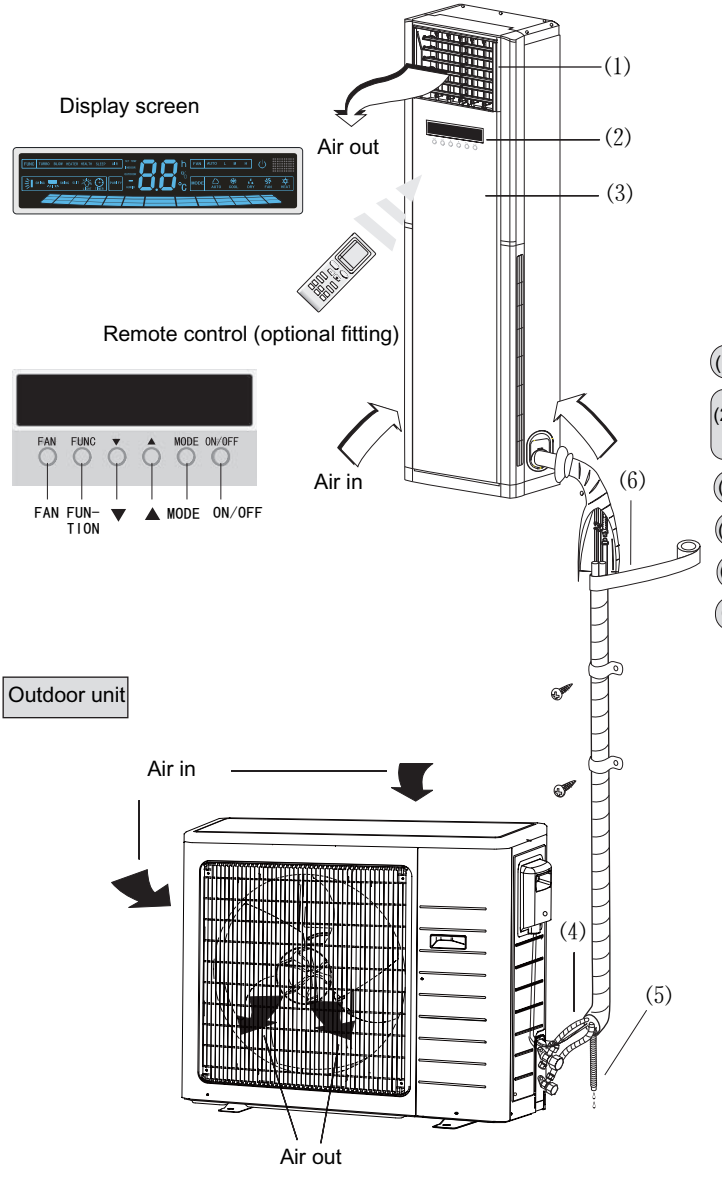
About display of ambient temperature:

1.In order to prolong lifetime of compressor,the air conditioner will automatically control start or stop of compressor according to actual condition. It will delay for a period of time to stop although the ambient temperature reaches setting temperature.

2.Because of difference among different regions in the room, the air conditioner will automatically supplement temperature to improve comfort.It is normal state that the temperature displayed on the unit is different from that detected by the user.

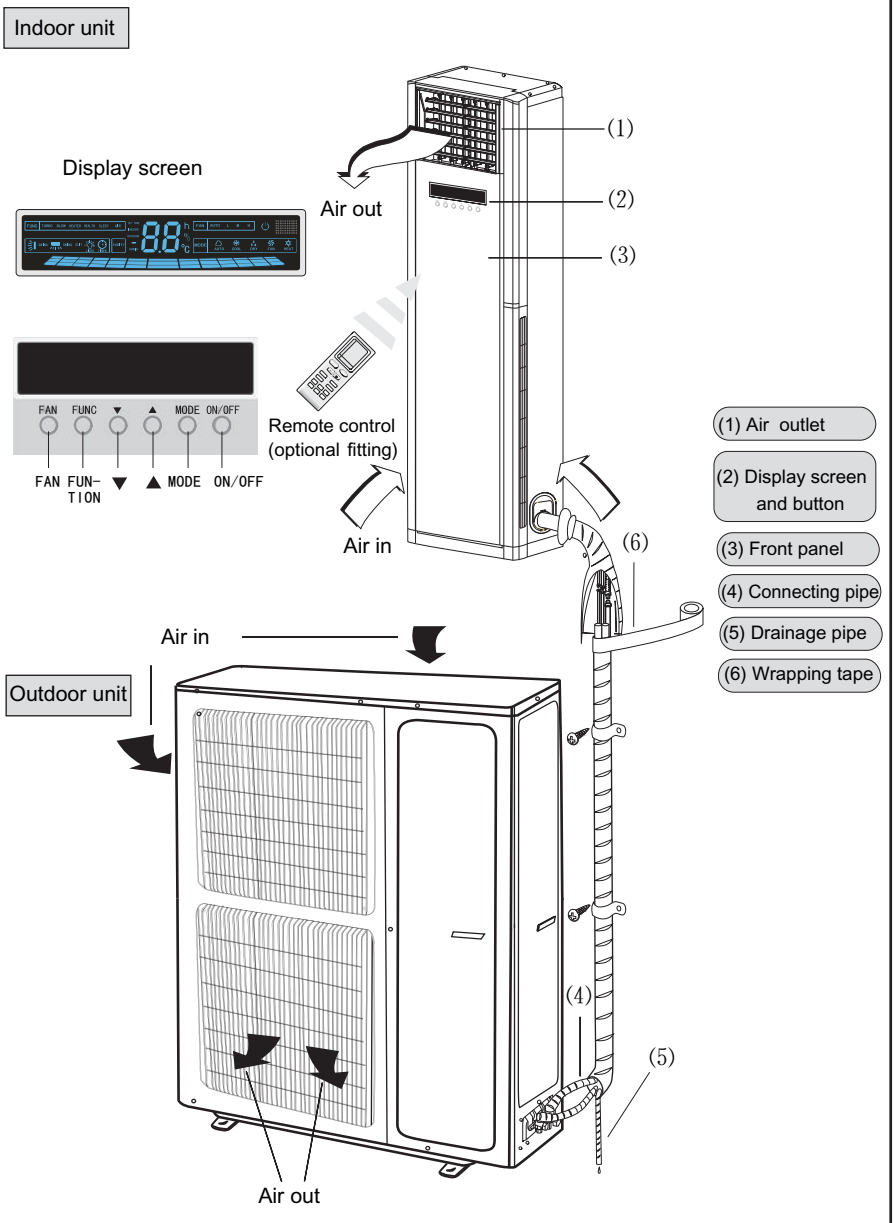
Names of Each Part of the Unit

Indoor unit



Apply to: V1RFI-30 / V1RFO-30

◆ Names of Each Part of the Unit



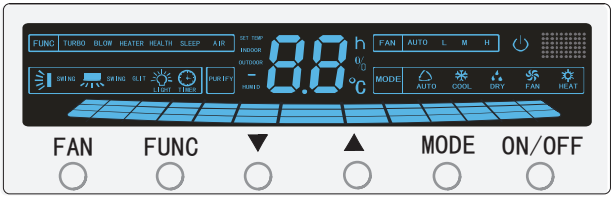
Apply to: V1RFI-50 / V1RFO-50

Names and Functions of Each Part

Function Buttons of Air Conditioner

Notes:The buttons of displayer are touch type,so they just need be touched slightly.

Air conditioner FUNC button



ON/OFF

ON/OFF Button

- Press this button to start or stop the unit.In this case,the former timer and sleeping setting will be cleared.
- ⏻ will show white after startup of the unit and show red after energization without running.

Mode

Mode Button

- Press this button to switch the modes:

indicates auto

indicates cooling

indicates dry

indicates fan

indicates heating (no heating mode for cooling only unit)

▼ and ▲

▼ and ▲ Button

- Each press of ▲ or ▼ ,the setting temp will increase or decrease 1℃. The seeting range is 16-30 ℃.Under auto mode, these buttons are invalid.
- Pressing ▲ or ▼ simultaneously,all functions of buttons on the displayer board will be shielded.Then buzzer will beep no matter any buuton is pressed;meanwhile,LC is displayed at dual 8 till it blinks 3 times to prompt the users, and then dual 8 resumes. Repressing ▲and ▼ simultaneously, the shielding will be solved for normal display of the unit.

▼ and ▲

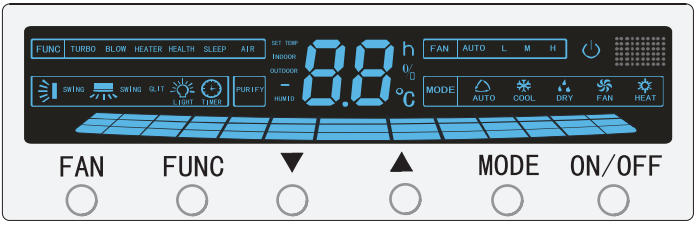
▼and▲ Button

Press FAN and ▲ simultaneously to set dynamic or static display of fan speed.

- During dynamic display,press FAN and ▲ simultaneously for static display.
- During static display,press FAN and ▲ simultaneously for dynamic display.

Names and Functions of Each Part

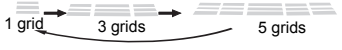
Displayer



FAN

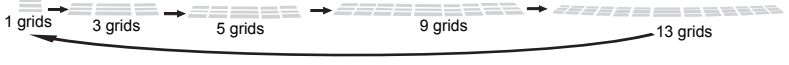
Fan Speed Button

- Pressing this button to switch the fan speed among AUTO-LOW-MID-HI-AUTO in cycle. This button is invalid under dehumidifying mode.
- Auto,low,mid,high or super-high fan speed may be displayed in dynamic or static.
- Low fan speed is displayed in dynamic:



- Mid fan speed is displayed in dynamic:

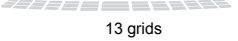
- High or super-high fan speed is displayed in dynamic:



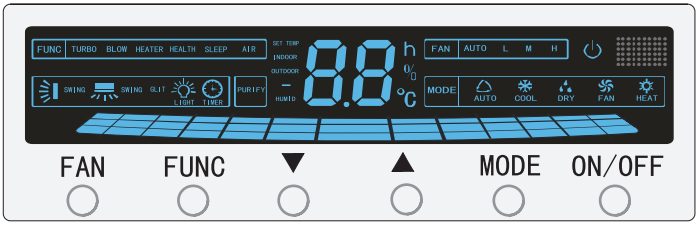
- Low fan speed is displayed in static:

- Mid fan speed is displayed in static:

- High or super-high fan speed is displayed in static:



Names and Functions of Each Part


Displayer
FUNC TURBO BLOW HEATER HEALTH SLEEP AIR
SWING SWING SLIT LIGHT TIMER PURIFY
SET TEMP INDOOR OUTDOOR HUMID
FAN AUTO L M H
MODE AUTO COOL DRY FAN HEAT
FAN FUNC ▼ ▲ MODE ON/OFF

FUNC

Function Button

- When the unit is in on state, press function button to orderly switch among turbo,blow, heater,health,sleep,air,up and down swing, left and right swing,dynamic display(fan speed),light,timer,purify,set,indoor,outdoor and humidity.
  If the word of a function is blinking,it can be set by pressing ▲ and ▼ .If the operation isn't changed within 5s after setting(20s for swing), it is confirmed. Or it can be confirmed by repressing FUNC to skip.
- Under BLOW status,the unit will directly stop if FUNC is pressed.
- During operation of health and air,"PURIFY" and corresponding purity value at dual 8 will be displayed in despite of confirmation. In this case,there is not unit symbol display and original display will resume in 5s.

TURBO

- TURBO has been set if this word lights.

BLOW

- BLOW has been set if this word lights.

HEATER

- HEATER is on if the icon of it lights. It will operate under certain condition.

HEALTH

- HEALTH has been set if this word lights.

SLEEP

- SLEEP has been set if this word lights.

AIR

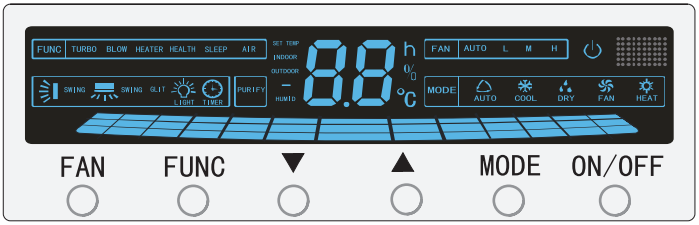
- AIR has been set if this word lights. No this function for this unit.

Up & Down Swing

- Setting status of up &down swing is displayed.

Names and Functions of Each Part

Displayer



FUNC

Left & Right Swing

- Setting status of left & right swing is displayed.

GLIT

- Fan speed is displayed in dynamic when this word lights.

LIGHT

- Light ON/OFF is displayed.

TIMER

- Set Timer ON/OFF.

PURIFY

- Current purity value will be displayed at dual 8 when this word lights.

SET

- Setting temp will be displayed.

INDOOR

- Current indoor ambient temp will be displayed.

OUTDOOR

- Current outdoor ambient temp will be displayed.

HUMIDITY

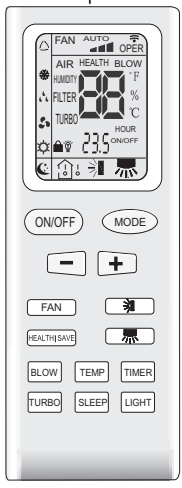
- Current humidity will be displayed.

Operation of Remote Controller

Names and functions of remote control buttons

Note: Be sure that there are no obstructions between receiver and remote controller; Don't drop or throw the remote control; Don't let any liquid in the remote control and put the remote control directly under the sunlight or any place where is very hot.

Signal transmitter



Remote controller

(+/−) TEMP. (+/−) button

- Pressing +button , the setting temp will be increased by 1℃.Pressing -button,the setting temp. will be decreased by 1 ℃ The temp. will be changed quickly by pressing the button continuously .Setting temp. range is 16~30 ℃。

FAN FAN speed button

- Press this button once,then fan speed will change as below:

Auto → Low speed → Middle speed → High speed

Note:Under the Dry mode, the fan speed isn't adjustable, low fan speed is imperative, but when operating this button, the wireless remote control will send this signal.

ON/OFF ON/OFF button

- Press this button to start or stop the unit.It will clear timer or sleeping function of last time.

MODE Mode button

- Press this button, the running mode will change as below:

AUTO
COOL
DRY
FAN
HEAT (Note:no for coolling only unit)

Swing up and down button

- Simpleness swing mode is defaulted for wireless remote control, in this mode, press this button, could turn on or turn off the Up and down swing function.
- When unit is turned off, synchronously press "+" and Up and down swing buttons, it could be switched between the simpleness swing mode and stationary swing mode, at this time, blinks 2 seconds.
- In Stationary swing mode, press this button,the angle for Up and down swing as show in below:

OFF

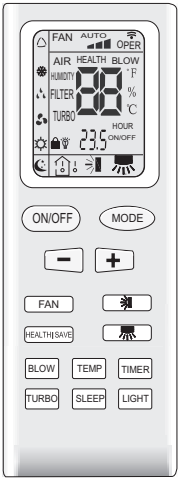
- When up and down swing louver is working, when turn off the unit, the siwng louver will immediately stop at current position. shows up and down swing louver swings back and forth as show in the above figure.

Operation of Remote Controller

Names and functions of remote control buttons

NOTE: This Remote control is universal, it could be used formany units, some buttons of this control which are not available to this unit will not be described below.

Remote control



HEALTH | SAVE

HEALTH | SAVE button

- HEALTH function:there is no this function for this unit. If press this key, the main unit will click, but it also runs under original status.
- Save energy function: this unit has no this function, press this button, the mian unit will click, "SE" will be displayed on the LCD of wireless remote control, fan speed automatically rotates, when repress this button, the fan speed will run at previous setting fan speed.

TURBO

Turbo button

- Set turbo on or off(the characters of turbo will appear or disappear) by pressing this key under cooling or heating mode.Once energized, the unit will be defaulted to be turbo off. This function can not be set under auto, dehumidify or fan mode, and characters of turbo won't appear.

TIMER

Timer button

- On the status of the unit on, press this button to set timer off. On the status of the unit off, press this button to set timer off. Press this key once, words Hour on(off) will appear and flicker. In which case, press +/- button to adjust time (press+/- button continuously to change timing value quickly the setting time range is from 0.5 to 24 hr.; press this key once again to fix the time, then remote controller will send out the signal immediately and hour on/off will stop flickering. If the time of that no press timer button under flickering status is above 5s,the timer setting will quit. If the timer has been set, press this button once again to quit it.

TEMP

Temp. display button

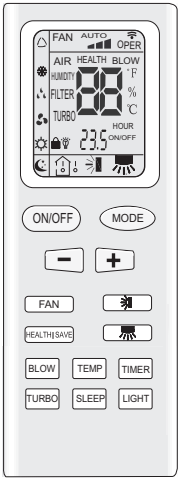
- After powered on, displaying presetting temperature is defaulted,(According to customer requirements to display,if there are no requirements,the presetting temperature displaying is defaulted, there is no signal display on the remote control). Press this button, (display), display the presetting temperature; (display), display indoor ambient temperature, will not change current display status. If current display status is indoor ambient temp. when received other remote control sginal, then will display presetting temp., 5s later return to ambient temp. display.
  Other models haven't this function. But pressing this button, the main unit will click and keep the original status.

Operation of Remote Controller

Names and functions of remote control buttons

NOTE: This remote control is universal, it could be used formany units, some buttons of this control which are not available to this unit will not be described below.

Remote controller



BLOW

Blow button

- Set Blow on (the characters of Blow will appear)or off (the characters of Blow disappears) by pressing this key under cool or dehumidify mode. Once energized, the unit will be defaulted to be Blow off. This function can not be set under auto, fan or heat mode, and the characters of Blow won't appear.

LIGHT

Light button

- Press this button to select LIGHT on or off in the displayer. When the LIGHT on is set,the icon will be displayed and the indicator light in the displayer will be on. When the LIGHT off is set, the icon will be displayed and the indicator light in the displayer will be off.

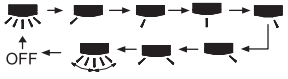
SLEEP

Sleep button

- Press this button, enter into SLEEP state, when repressed, it will quit. The sleep function will be canceled with the stop of the unit. There is no SLEEP function under AUTO and FAN mode. is the icon for sleep function.
- At COOL mode: the SLEEP mode runs after 1hour, the setting temp. will be increased by 1℃, 2 hour later, setting temp. will be increased by 2℃ and then will run at this setting temperature.
- At HEAT mode: the SLEEP mode runs after 1hour, the setting temp will be decreased by 1℃, 2 hours later setting temp. will be decreased by 2℃ ,then it will run at setting temperature.

Left and right swing button

- Simpleness swing mode is defaulted for wireless remote control,in this mode, press this button, could turn on or turn off the Left and right swing function
- When unit is turned off, synchronously press "+" and Left and right swing buttons, it could be switched between the simpleness swing mode and stationary swing mode, at this time, blinks 2 seconds.
- In Stationary swing mode, press this button,the angle for Left and right swing as show in below:



- When left and right swing louver is working, when turn off the unit, the siwing louver will immediately stop at current position. shows left and right swing louver swings back and forth as show in the above figure.

◆ Operation of Remote Controller

Guide for operation-general operation

1.Press ON/OFF button to start the unit after powering the main unit on.(Note: Power the unit on every time, the big -guide louver and small-guide louver will be closed firstly.)

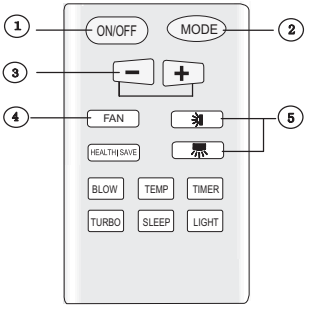
2.Press MODE button to select desired running mode.

3.Press +/ - button to set the desired temperature.

(It is unnecessary to set the temperature at AUTO mode)

4. Press FAN button to set fan speed, the AUTO FAN, LOW, MID or HIGH could be selected.

5. Press button and button to set swing mode.



Guide for operation-optional operation

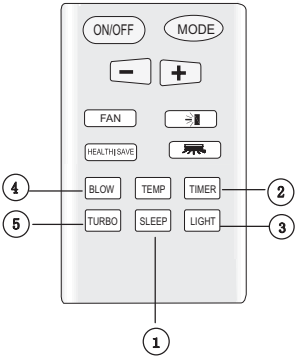
1.Press SLEEP button, set the sleep mode.

2.Press TIMER button, then press +/- button, to set the cheduled timer on or timer off.

3. Press light button to control displayer light on or off.

4. Press Blow button to set Blow function on or off.

5. Press turbo button to set this function on or off.



Introduction for special function

★ About blow function

This function indicates that moisture on evaporator of indoor unit will be blowed after the unit is stopped to avoid mould.

1. Having set blow function on: After turning off the unit by pressing ON/OFF button indoor fan will continue running for about 10 min. at low speed. In this period, press blow button to stop indoor fan directly.
2. Having set blow function off: After turning off the unit by pressing ON/OFF button, the complete unit will be off directly.

◆ Operation of Remote Controller

★ About AUTO RUN

When AUTO RUN mode is selected, the setting temperature will not be displayed on the LCD, the unit will be in accordance with the room temp. automatically to select the suitable running method and to make ambient comfortable.

★ About turbo function

If start this function, the unit will run at super-high fan speed to cool or heat quickly so that the ambient temp. approachs the preset temp. as soon as possible.

★ About lock

Press +and - buttons simultaneously to lock or unlock the keyboard. If the remote controller is locked, the icon will be displayed on it, in which case, press any button, the mark will flicker for three times. If the keyboard is unlocked, the mark will disappear.

★ About switch between Fahrenheit and Centigrade

Under status of unit off, press MODE and - buttons simultaneously to switch ℃ and ℉.

★ About new function of defrosting

It indicates: after starting this function by remote controller and the unit has been under defrost status, If turn off the unit by remote controller, the unit will not stop defrosting until it is finished; if change setting mode by remote controller, the function ,which is set last time, won't be carried out until defrosting finished.

Operation of this function on or off: If remote controller is under off status, press mode button and blow button simultaneously in order to enter or cancel this new function. If the unit is under defrost mode, dual eight position on remote controller will display H1.If switch to heat mode, the position will display H1, which flickers for 5s, in which case, press +/- button, H1 will disappear and setting temp. be displayed.

After remote controller is powered on the new defrost function will be defaulted to be closed.

◆Operation of Remote Controller

Changing batteries and notices

1.Slightly to press the place with OPEN along the arrowhead direction to push the back cover of remote controller. (As show in Fig 1.)

2.Take out the old batteries, insert two AAA alkaline cells. (As show in Fig 2.)

3.Attach the back cover of remote control.

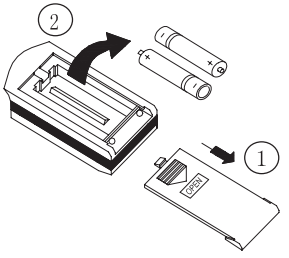


Fig.1

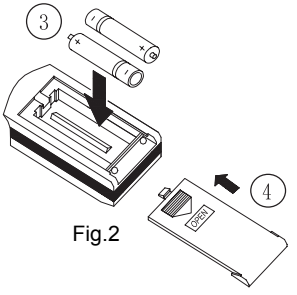


Fig.2

NOTE:

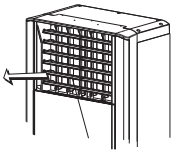
- When changing the batteries, do not use the old or different batteries, otherwise, it can cause the malfunction of the wireless remote control.
- If the wireless remote control will not be used for a long time, please take them out, and don't let the leakage liquid damage the wireless remote control.
- The operation should be in its receiving range.
- It should be placed where is 1m away from the TV set or stereo sound sets.
- If the remote control cannot operate normally, please take the batteries out, and then reinsert it 30s later; if it is also abnormal ,please replace the batteries.
- If the main unit needs to be remote controlled, please aim remote controller at the receiver of main unit in order to improve the receiving sensitivity of the main unit.
- When the remote controller sends out signal, a mark will flicker for about 1s. The bell will ring if the main unit receives effective signal.

◆ Adjustment of Swing

Up & Down Swing

Notes:

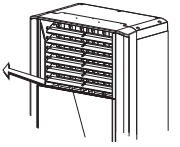
- Up &down swing can be selected to control start or stop of up & down swing motor by pressing up & down button on remote controller or FUNC button on displayer,so that guide louver will swing up and down or stop at a certain angle.



Guide louver (level)

Fig.3

- If indoor fan has operated,press up &down button on remote controller. Refer to remote controller instruction for swing mode.
- Select up &down swing button on displayer to set it,and then press ▼or ▲ button to start or stop swing.Press it once to start and repress it to stop.



Guide louver (upward)

or can be set

Fig.4

- If stop of swing is selected,the characters and icon about up & down swing will disappear.When other states are selected, characters and icon about up & down swing will show again.

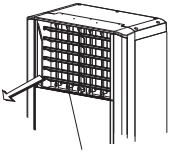


Fig.5

- Front or upward air supply should be set for cooling and dehumidifying mode.(Fig.4)
  At the begining of startup of the unit,downward air supply can be selected for quick cooling around the people,but it can not be kept for a long time in order to ensure good circulation of air in the room .
- Downward air supply should be set for heating.(Fig.5)

Guide louver (downward)

or can be set

◆ Adjustment of Swing

Left & Right Swing

- Left & right swing can be selected to control start or stop of left & right swing motor by pressing left & right button on remote controller or FUNC button on displayer,so that guide louver will swing left and right or stop at a certain angle.
- If indoor fan has operated,press left & right button on remote controller. Refer to remote controller instruction for swing mode.
- Select left & right swing button on displayer to set it,and then press ▼or ▲ button to start or stop swing.Press it once to start and repress it to stop.
- If stop of swing is selected,the characters and icon about up & down swing will disappear.When other states are selected, characters and icon about up & down swing will show again.

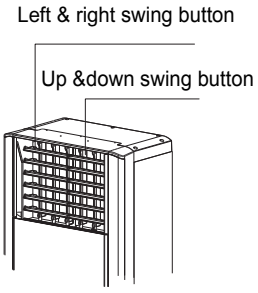
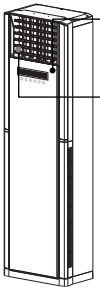


Fig.6

Instruction to Special Functions

Operation and Notice for Slide Door

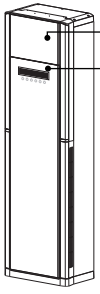
At the beginning of operation



1.When indoor unit is on,the slide door will automatically move downwards to inner side of front panel.

2.If slide door completely open, up & down swing louver will begin to run and indoor fan will start.

In the end of operation



1.When indoor unit is off,the up & down guide louver will swing at specified location.

2.If up & down guide louver stops ,slide door will automaticaly rise to close air outlet.

Notice:

1.Never manually adjust rise or drop of slide door.

2.The slide door will keep at current position once power failure.It will automatically close after recovery of power.

3.If FC is displayed on the displayer, there will be malfunction with the slide door .It will be cleared after restart of the unit. If FC shows once agian ,the unit should be repaired.

4.If the unit is started under cooling mode for a period of time,there will be some water drop on the slide door ,which is normal.

◆ Clean and Care

Caution

1.Turn power off and pull out the power plug before cleaning air conditioner,or it may cause electric shock.
2.Never sprinkle water on the indoor unit and the outdoor unit for cleaning because it can cause electric shock.
3.Volatile liquid (e.g. thinner or gasoline) will damage the air conditioner,so wipe the units with a dry soft cloth, or a cloth slightly moistened with water or cleanser.

Clean the unit

① Cut power off before cleaning

Turn off the air switch after unit stops running.

② Use soft cloth when cleaning cabinet

If the unit is very dirty, dip cloth into warm water below 40℃ and dry the cloth before cleaning it. (As shown in Fig.7)

③ Don't spray water on indoor unit

Spraying water will damage microcomputer and circuit board in the unit (As shown in Fig.7)

Fig.7

Clean the air filter(once every 2 weeks)

① Disassembly of air filter

As shown in Fig.8,take out the decorative strip at 1) position , and unscrew the screw.After opening the glass panel unscrew the screws fixing the air filter.At last pull out the air filter from the arrow direction.

② Cleaning the filter

Slightly flat the filter or clean the filter with electric cleaner.If too much dust on the filter,clean it with a little neutral detergent or warm water.After that, dry the filter and reinstall it,as shown in Fig.8.

NOTE: Do not dry the filter by exposing it under direct sunshine or near a heating oven, or it may get deformed.

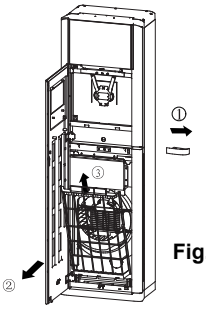
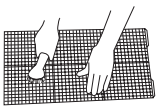


Fig.8



◆ Clean and Care

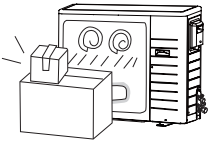
Check before use

① Be sure that nothing obstructs the air outlet and intake vents

② Check that whether earthing wire is properly connected or not.

③ Check that whether the batteries of air conditioner are changed or not.

④ Check that whether the installation stand of the outdoor unit is damaged or not. If damaged, please contact the dealer.



Maintenance after use

① Cut the power off.

② Clean the filter and indoor and outdoor units' bodies.

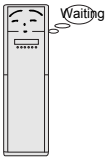
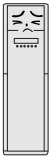
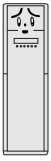
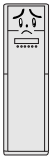
③ Clear dust and obstruction from the outdoor unit.

④ Repaint the rubiginous place on the outdoor unit to prevent it from spreading.

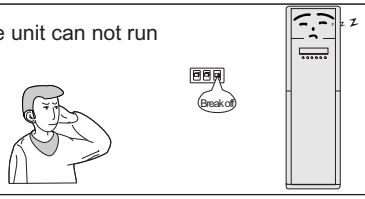
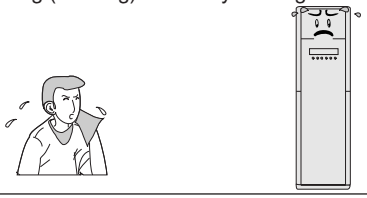
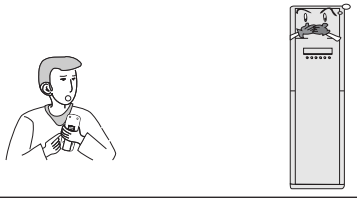
◆ Troubleshooting

CAUTION

• Don't attempt to repair the air conditioner by yourself.It may cause the electric shock or fire. Please check the following items before asking for repair.It can save your time and money.

Phenomenon	Troubleshooting
Not operate immediately when the air conditioner is restarted. 	Once the air conditioner is stopped, it will not operate in approximately 3minutes to protect itself.
There's unusual smell blowing from the outlet after operation is started. 	The unit has no peculiar smell by itself. If has, that is due to the smell accumulated in the ambient. Solution method: Cleaning the filter. If problem still has, so need to clean air conditioner. (Please contact with authorized maintenance center.)
Sound of water flow can be heard during the operation. 	The air conditioner is started, when it is running the compressor started or stopped running, or the unit is stopped, sometimes there is swoosh or gurgle, the sound is due to refrigerant flowing they are not malfunctions.
In COOL mode, sometimes the mist emitted from the air outlet vent. 	When the indoor temperature and humidity are very high, this phenomenon would happen. This is caused by the room air is swiftly cooled down. After running for a while, indoor temperature and humidity will fall down, the mist will die away.
Creaking noise can be heard when start or stop the unit.	This is caused by the deformation of plastic due to the changes of temperature.

◆ Troubleshooting

Phenomenon	Troubleshooting
The unit can not run 	● Has the power been shut down? ● Is the circuit protection device tripped off or not? ● Is voltage higher or lower? (Tested by professionals) ● Is the Timer correctly used?
Cooling (Heating) efficiency is not good. 	● Is Temp. setting suitable? ● Were inlet and outlet vents obstructed? ● Is filter dirty? ● Are the windows and doors clothed? ● Did Fan speed set at low speed? ● Is there any heat sources in the room?
Wireless remote control is not available 	● The unit is interfered by abnormal or frequent functions switchover occasionally the controller cannot operate. At this time, you need to pull out of the plug, and reinsert it. ● Is it in its receiving range? Or obstructed? ● To check the voltage in wireless remote control inside is charged, otherwise to replace the batteries. ● Whether the wireless remote control is damaged.
If water leakage in the room	● The air humidity is on the high side. ● Condensing water over flowed. ● The connection position of indoor unit drainage pipe is loosed.
If water leakage in outdoor unit	● When the unit is running in COOL mode, the pipe and connection of pipe would be condensed due to the water cooled down. ● During heating or defrosting operation, the melted water will blow out. ● The water adhered on the heat exchanger will drop during heating operation.
Noise from indoor unit emitted	● The sound of fan or compressor relay is switching on or off. ● When the defrosting is started or stop running, it will sound. That is due to the refrigerant flowed to the reversed direction.

◆ Troubleshooting

Phenomenon	Troubleshooting
Indoor unit can not blow	● In heating procedure, when the heat exchanger temperature of indoor unit is low, it stops blowing in order to avoid blowing cool air (within 90 s). ● When heating, if the outdoor temperature is low and in high humidity, there is much frost formed in the outdoor unit heat exchanger, the unit will automatically defrost, indoor stop blowing fan about 10mins, during the defrosting procedure, there will be water or vapor emitted.
Moisture formed on air inlet grill	If air conditioner is running in a high humidity for a long time, the moisture may condense on the air outlet grill and drip off.

Immediately stop all operations and plug out, contact the dealer in following situations.

▲ There is harsh sound during operation;
▲ The terrible odors emitted during operation;
▲ Water is leaking in the room;
▲ Air switch or protection switch often breaks;
▲ Carelessly splash water or something into air conditioner.

▶ Stop running and pull out of the plug

◆ Installation Service-Notes for Installation

Important notices

1. The unit installation work must be done by qualified personnel according to the local rules and this manual.
2. When removing the unit to the other place, please firstly contact with the local maintenance center.

Basic requirements for installation location

Installation at the following places may cause failure of the air conditioner. Please contact installation and service agency if the installation at such places cannot be avoided.

- Choose a place far away from heat source, steam and inflammable gases.
- A place with high frequency facilities, such as radio equipment, electric welder or medical equipment;
- A region with saline-sodic soil near the sea;
- A place full of machine oil;
- A place with sulphide gases (such as sulphur spring);
- An environment with special conditions.

Installation location of indoor unit

1. Select a place, avoid the inflammable gas produce or leakage.
2. Select a place avoid the water vapor or oil sprayed on the unit.
3. Ensure that airflow can reach every conner of the room.
4. Choose a place so that the connection pipe could be easily pulled out.
5. Select the place where the airflow of the unit can not be blocked.
6. Select the position where the few outer air influenced.
7. Select the firm and flat ground.
8. Ensure sufficient clearance and space for service and maintenanc.
9. Ensure the installation of indoor unit is in conformity with the requirements of installation dimension drawing;

Installation location of outdoor unit

1. A place where noise and airflow generated by air exhaust do not affect the neighbors, animals and plants.
2. Ensure good ventilation of outdoor unit.
3. No obstacles near the outdoor unit obstructing the air intake and air exhaust of the unit
4. The installation position shall be able to withstand the weight and vibration of the outdoor unit .
5. Choose a place far away the direct sunshine or strong wind.
6. The indoor unit shall be in conformity with the requirements of installation diagram, and ensure sufficient clearance and space for service and maintenance.
7. The height of connection pipe should be within 5meters, and the length of it should be within 10meters.
8. Please select the place keep out of the children's reach.
9. Select the place which do not influence the communal path way and the appearance of the city.

◆ Notes for Installation

Electric wiring

1. It should be connected with the special earth device on the building, it should be installed by the professional personnel. There should be enough capacity of creepage protector and air switch. (please refer to the following table)
2. The power supply must use the rated voltage and special circuit.
3. The diameter of the power wiring should be large enough. (Please refer to the following table)
4. The wiring work should conform to relative standard.
5. The ground must be connected.
6. Don't pull the power wire strongly.

Requirements for electric safety

1. First install wire of outdoor unit and then wire of indoor unit. After finishing wiring and piping, connect the unit to the power supply.
2. Please strictly follow the instruction of this manual when installing indoor unit and its piping.
3. The unit is subject to change without prior notice.
4. Please read this manual carefully before installation.

The unit power is large, the power supply circuit supplied for the unit should accord with the following:

1. Installed the air switch with suitable capacity, please refer to the following, the air switch must have the functions of magnetic tripping and heat tripping. (Note: never use the fuse to protect the branch circuit.)
2. The capacity of wire diameter should be 1.5 times larger than the unit max. current.
3. Installed the creepage protector with enough capacity.
4. Make sure to divide the branch circuit for the special circuit.
5. The min. clearance between combustible surface and the air conditioner is 1.5 meters.
6. The indoor unit and outdoor unit must be reliably earthed.

Models	Air switch capacity
V1RFI-30/V1RFO-30	25A
V1RFI-50/V1RFO-50	16A

Note:

- Please pay attention to surrounding conditions (eg. Ambient temp., direct sun shine, rain drops etc.)
- Power cord or power connecting wire must be copper cored cable according with national criteria.
- The indoor unit and outdoor unit must be reliably earthed.

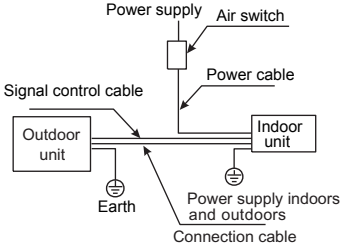
◆ Notes for Installation

Notes for electric wiring:

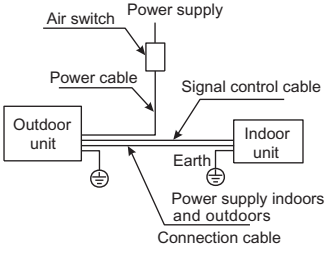
1. Special circuit must be used for power supply.
2. The circuit must be installed by special serviceman.
3. Please do the wiring according to the following wiring diagram. The screws must be tightly fastened, the slippery screws must be changed, the tapping screw cannot be used for electric wiring.
4. Please wiring according to the circuit diagram on the unit.
5. Adopts the cables which are attached with the unit, please do not to change the cables optionally, and do not change the length and ends of the cable, if need to adjust, please contact with the local after-sales service center.
6. For the power cord which is without the plug, that cannot be connected the plug for using.
7. The electric wiring connection of indoor and outdoor should not be affected by the stretch and bending.
8. ⏚ is the symbol of earthing, it denotes that the yellow-green dual wire only can be connected with the place with the symbol.
9. After the electric installation completed, make sure to use wire clamp to fix the power cord, power supply connection cable and signal cable tightly, and ensure that there is enough space in the fix position and each connection terminals of the lead wires.
10. Please use about a half kilogram of force, to check whether each lead wire is installed well. When checking the air connector, please enclasp it, and check each lead wire of which is connecting with the connector.

Installation diagram, please refer to the following.

For V1RFI-30/V1RFO-30 model:



For V1RFI-50/V1RFO-50 model:



Note:the unit should be correctly earthed to avoid interference to the complete unit and ensure personal safety.

Requirements for earthing

1.The air conditioner is the first class electric appliance:

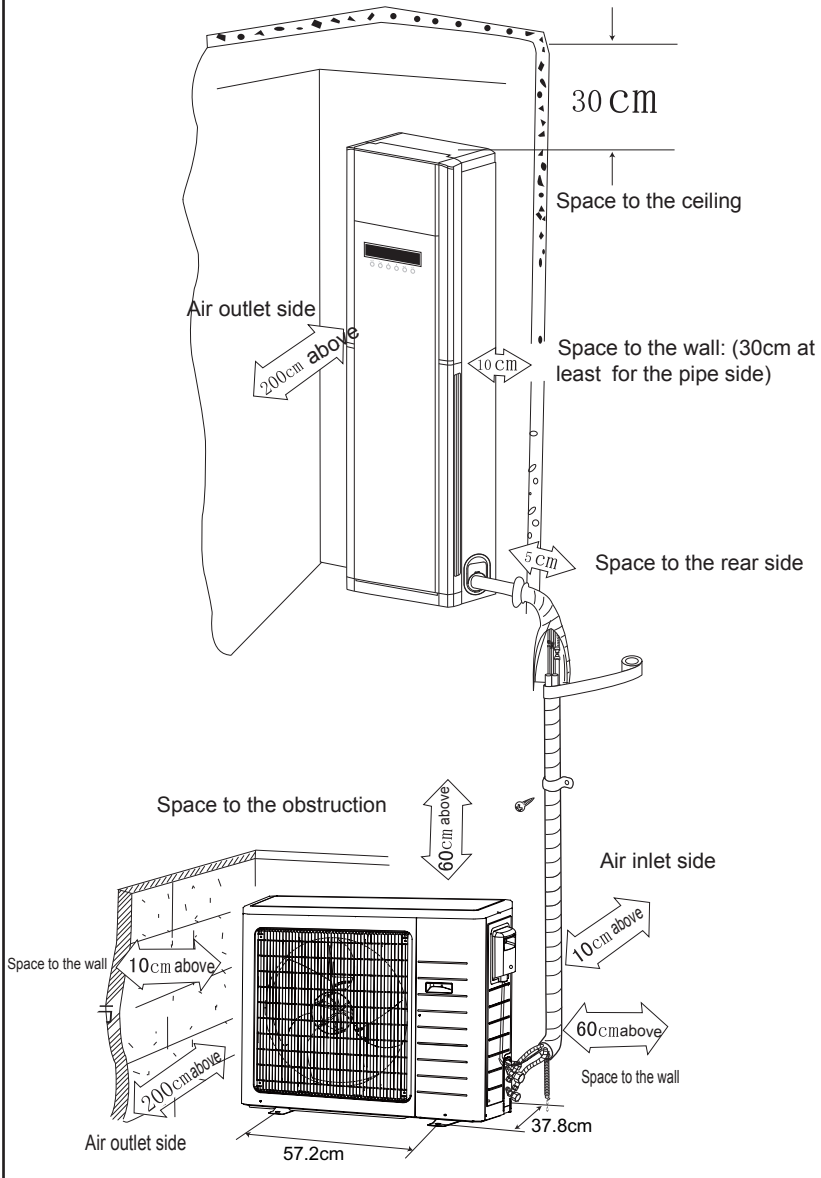
2.The yellow and green dual color wire in the air conditioner is earth wire, it cannot be used for other purposes, do not cut off it. Do not fix it by the tapping screw: otherwise, it can cause the electric shock.

3.Please do not connect the earth wire to the place:The power supply must be reliabbly earthed.

① Water pipe ② Gas pipe ③ Drainage pipe ④ The place where is unreliable suggested by the professional.

Installation Dimension Diagram

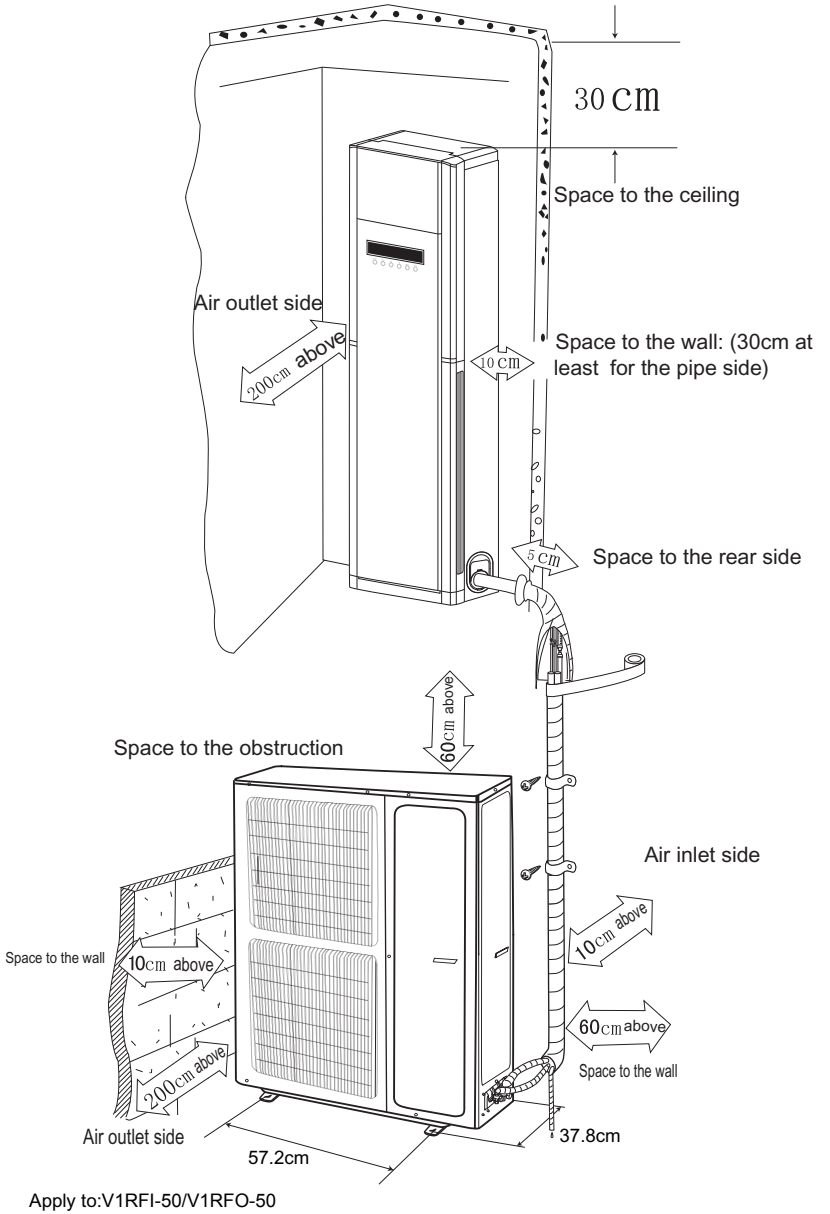
Installation dimension diagram



Apply to: V1RFI-30 / V1RFO-30

◆ Installation Dimension Diagram

Installation dimension diagram



Apply to:V1RFI-50/V1RFO-50

◆ Installation of Indoor Unit

Installation of connection pipe

- Before wiring and piping, please remove the filter after opening the glass panel.

1.As shown in Fig.9,take out the decorative strip at position 1 and then unscrew the screws.Remove the screws fixing the filter after opening the glass panel.At last take out the filter along the arrow direction at position 3.

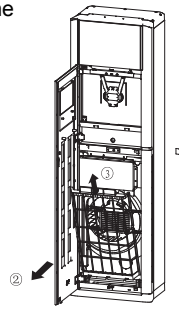


Fig.9

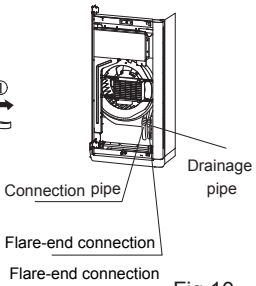


Fig.10

2.During piping and wiring in the left and at the rear side,the attached accessories should be used,as shown in Fig.11.

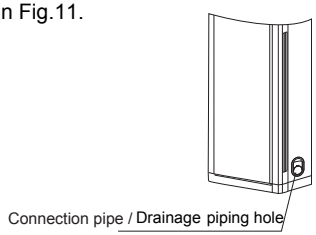


Fig.11

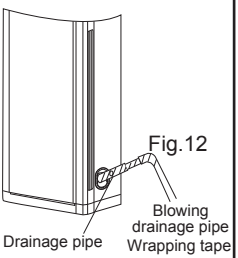


Fig.12

Installation of drainage pipe

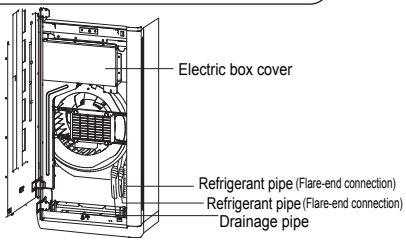
1. Make sure drainage pipe is led outdoors (discharge side).
2. Butt-joint drainage pipe in the unit with blowing drainage pipe and fix them with insulated tape.
3. If the drainage pipe should be wrapped with heat-preservation material (at least 9mm thickness), and then wrap it with tape to prevent air from entering into the pipe,which will cause condensation.
4. After connecting, check if water can discharge properly or if there is any leakage. (As shown in Fig.12)

Electric connection

1.Open the glass panel.

2.Unscrew the screws fixing elecrtic box cover and make it exposed,as shown in the right figure.

3.Pass the power connection wire through the pipe-through hole of indoor unit.



Sketch of indoor unit

Installation of Indoor Unit

4. According to the diagram for wiring, according to the marks on wire board for connection correspondingly,as shown in Fig.13.

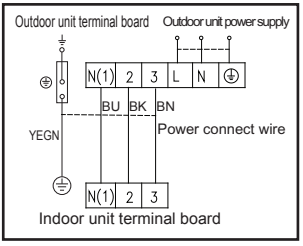
5. Place the section with sleeve of the power connection wire into the wire groove, then cover the electric box cover, tighten the fixing screw, and tighten the connection wire with clamp.

6. For the unit with signal wire, the signal wire is connected with indoor unit via connector. Clasp the section of signal wire with sleeve with the wire clamp.

7. Recover the electric box cover.

Wire connection according to this diagram:

ForV1RFI-30/V1RFO-30 model:



For V1RFI-50/V1RFO-50 model:

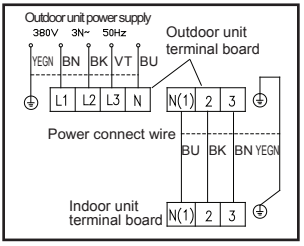


Fig.13

Note:

When the connection wire length isn't enough, please contact with the appointed service shop for buying a dedicated electric wire with enough length, the connection isn't allowed between the wire.

- The wrong wiring connection isn't allowed, it may cause the malfunction of the components.
- Tighten the terminal screw.
- After tightened the screw, and slightly pull the electric wire to confirm whether it is firmed or not.
- Wrong earth wire connection may cause electric shock.
- The electric wire covering plate must be fixed well, and tighten the connection wire, if the wire covering plate isn't installed well, that may lead the dust, moisture enter in or due to the outside force impact, it may cause fire or electric shock.

Installation of baffle

- Please install it after installtion of connection pipe and drainage pipe according to Fig.14.

1.Loosen the screws and adjust the baffle position up and down to clamp connection pipe/drainage pipe as much as possible.

2. Tighten the screws.

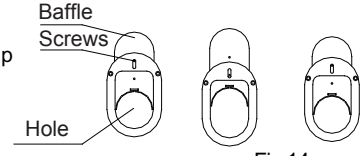


Fig.14

◆ Installation of Indoor Unit

Notes for piping

Pipes for refrigerant and drainage pipe should be insulated to avoid frosting and dripping.

1. Both of the indoor and outdoor units adopt flare-end connection. Refrigerant pipe as shown below is used to connect indoor and outdoor units.(As shown in Fig.15)

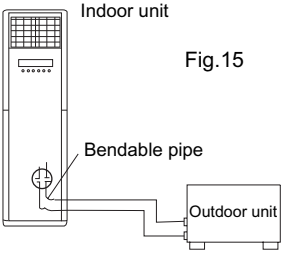


Fig.15

Note: Don't bend the bendable pipe back and forth more than 3 times. Insulate all exposed parts of the flare-end connection joint and refrigerant pipe. (As shown in Fig.16)

2.Check valve of the outdoor unit should be closed (in factory). Every time of connection,screw cap at check valve should be unscrewed and then connect it with flare-end pipe immediately (within 5 min).Otherwise, dust, moisture and other impurities may go into the pipe and cause malfunction.

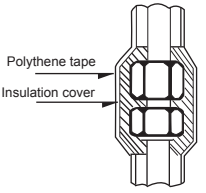


Fig. 16

- Notes for bendable pipe:
  1.The part with bendable pipe should be used in indoor side.
  2. The bending angle should not be more than 90.
  3. It's better for the bend to be in the middle of the pipe and the radius of the bend is the bigger the better.
  4. Don't bend the bendable pipe more than three times.

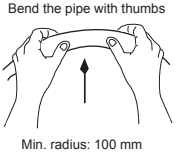


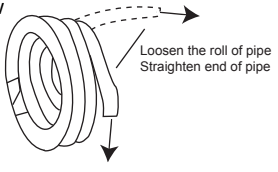
Fig. 17

- When bending the pipe
  1. Cut some part of the insulation pipe at the place of the bend (and wrap with polythene tape after bending).
  2. Make radius of the bend as big as possible so that the pipe will not get flat or broken.
  3. Tighten the pipe bending by the rubber bender.

- When using copper pipe bought locally

Check valve of the outdoor unit should be closed completely (in the factory). After connection of indoor and outdoor units via connection pipe, discharge the air from service vent of low-pressure check valve of the outdoor unit. After that,screw down the nuts to service vent.

Install the big handle.



- After step 1 or 2 above

Check valve of the outdoor unit should be fully opened to ensure smooth flow of connection pipe between indoor and outdoor units.

Note: Before fastening nut of the flare-end pipe, please apply some refrigerant oil to the end of the pipe and the joint.

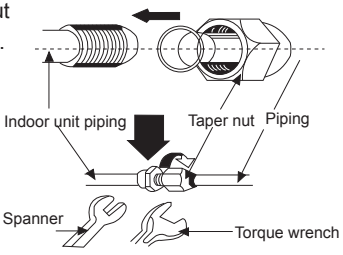
◆ Installation of Indoor Unit

Installation of connection pipe

1.Align the center of the piping flare with the pyramidal face of relevant valve.

2. Screw in the flare nut by hand and then tighten the nut with spanner and torque wrench refer to the following.

Hex nut	Tightening torque (N·m)
Φ6	15～20
Φ9. 52	35～40
Φ12	50～55
Φ16	60～65
Φ19	70～75



NOTE: Firstly connect the connection pipe to indoor unit, then to outdoor unit; pay attention to the piping bending, do not damage the connection pipe; the joint nut couldn't tighten too much, otherwise it may cause leakage.

Exhausting(with A5mm hexagon wrench)

● When using refrigerant of outdoor unit:

1. Tighten nuts A, B, C, D substantially.
2. Remove cover from check valve A (As show in Fig.18)
3. Twist open core of liquid valve B with hexagon wrench, and at the same time hold screw driver against core of gas valve A to let gas out. After 15 seconds of exhausting and refrigerant appears, close one-way valve and tighten bonnet.
4. Fully open cores of both liquid valve and gas valve, tighten bonnet, then check with soap wate or leakage detector to see if there is any leaking in the joints of piping between indoor and outdoor units.

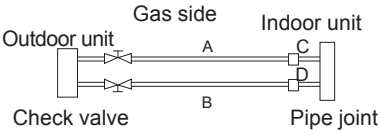
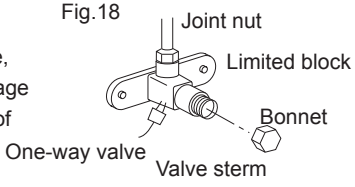


Fig.18



Air discharge method	Length of connection pipe	Charge volume of additional refrigerant
Use refrigerant of outdoor unit	Below 5m	Volume on nameplate
Use vacuum pump	5-15m	24K model Volume on nameplate+30g/m 48K model Volume on nameplate+30g/m

◆ Installation of Outdoor Unit

When using vacuum pump

1. Connect charging hose of to charge nozzle. (both cores of gas and liquid valves should be shut down tightly.)
2. Connect joint of charging hose to vacuum pump.
3. Fully open low-pressure valve(Lo) of manometer.
4. Make vacuum pump operate for 15 min above.Close low-pressure valve(Lo) to stop vacuum pump after confirmation of -1.0X10^{5}pa(-76cmHg) at manometer .Then check if there is air in the pipe(keep for 2 min to see if indicated needle of manometer returns).If there is ,re-operate the vacuum pump after restoration.
5. Remove charging hose from gas valve.
6. Fully open the cores of gas valve and liquid valve.
7. Tighten bonnet of gas valve and liquid valve and nut of charge nozzle.(As shown in Fig.19)

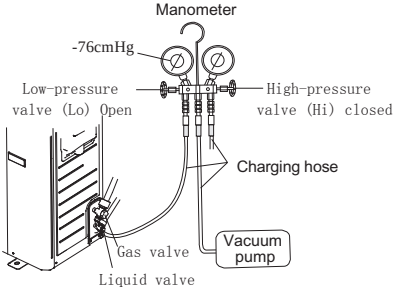
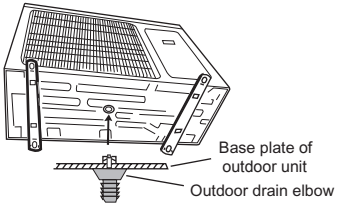


Fig.19

Outdoor condensation drainage (Heat pump type only)

When the unit is heating, the waste water formed in the outdoor unit can be drained out reliably through the drain hose.

Installation: Install the outdoor drain elbow in the Ø 25 on the base plate as below, and joint the drain hose to the elbow, so that the waste water formed in the outdoor unit can be drained out to a proper place.



Leakage detection

Coat soap water at the gap between connection pipes to see if there is any leakage.If there is air bubble at this position,it should leak.(As shown in Fig.20).Leakage detector, if possible,can be used.

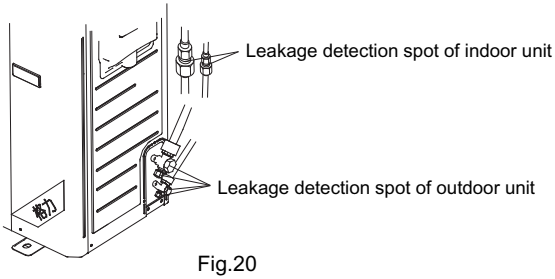


Fig.20

Installation of Outdoor Unit

Wiring method

1. Remove the front side plate.

2. Please refer to the electric wiring connection of the indoor unit, then fix them with wire clamp.(As shown in Fig.21)

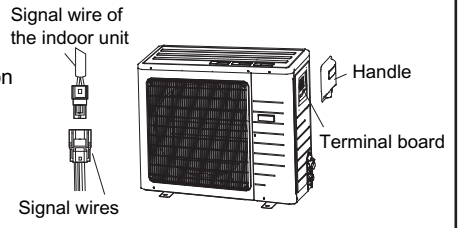


Fig.21

◆ Test Operation and Check after Installation

Check after installation

Items to be checked	Possible malfunction
Has it been fixed firmly?	The unit may drop, shake or emit noise.
Have you done the refrigerant leakage test?	It may cause insufficient cooling(heating) capacity.
Is heat insulation sufficient?	It may cause condensation and dripping.
Is water drainage well?	It may cause condensation and dripping.
Is the voltage in accordance with the rated voltage marked on the nameplate?	It may cause electric malfunction or damage the part.
Is the electric wring and piping connection installed correctly and securely?	It may cause electric malfunction or damaged the part.
Has the unit been connected to a secure earth connection?	It may cause electrical leakage.
Is the power cord specified?	It may cause electric malfunction or damage the part.
Is the inlet and outlet been covered?	It may cause insufficient cooling(heating) capacity.
Has the length of connection pipes and refrigerant capacity been recorded?	The refrigerant capacity is not accurate.

Test operation

1. **Before test operation**

   (1) Do not switch on power before installation is finished completely.

   (2) Electric wiring must be connected correctly and securely.

   (3) Cut-off valves of the connection pipes should be opened.

   (4) All the impurities such as scraps and thrums must be cleared from the unit.

2. **Test operation method**

   (1) Switch on power, press ON/OFF button on the remote controller to start the operation.

   (2) Press MODE button to select the COOL, HEAT, FAN to check whether the operation is normal or not.

◆ Dust Collecting Device

Clean of Silver Antibacterial Electronic Dust Collecting Device

1. Disassembly of silver antibacterial electronic dust collecting device

1) Make sure that the unit has stopped running and cut off the power.

2) Completely open the air inlet panel according to Disassembly of Filter.

3) Forcibly press buckle and lift the handle of dust collector at the same time to take the frame of it out.

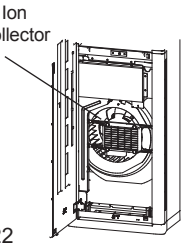


Fig.22

Frame of dust collector

2. Cleaning Method

Take out LTC filter and silver ion filter and then put them in a container with warm water and a litter neutral scour to soak for about 10min.Brush them with soft brush till they are clean.After that,wash them with clean water. At last,air them.

LTC filter Silver ion filter

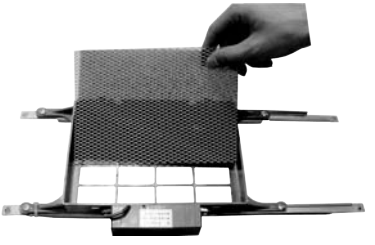


Fig.23

3.Notice

(1) Make sure power of silver antibacterial dust collecting device has been stopped for above 60s.

(2) Never blow it with high pressure air directly to avoid damage to eye and it.

(3) Never dry it in the sunlight or with fire to avoid damage and deformation.

(4) Never make the tungsten wire broken , neither do forcibly brush LTC filter and silver ion filter disassembly and cleaning.

(5) Never clean it with corrosive scour.

(6) The silver antibacterial dust collecting device must be completely aired before installation and usage to avoid electric leakage.

Dust Collecting Device

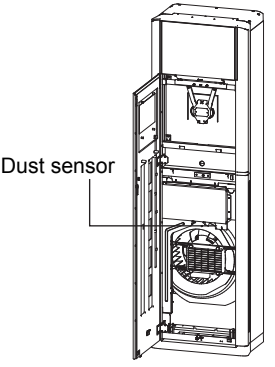
Detection of Air Quality

1.Working Principle

The air quality can be judged by detection of concentration of pelagic particles in the air with the dust sensor in the unit.

Pelagic particles include dust, cigarette smoke and so on.

If bad air quality is detected,the unit whose indoor fan is on will automatically turn on dust collector to purify.



2.Display

Turning on or off HELTHY function on the displayer,"PURIFY" and numbers of dust grade will be displayed on the displayer at the same time.Abouts 5s later, original display state will resume. According to definition of our company, air quality is displayed by 00-09.The lower the number is ,the better the air is.

3.Clean and Maintenance

Because dust sensor is a sensitive part ,long-time operation of it will cause adherence of dust,oil smoke and others on its key part-lens,which may affect its sensibility and accuracy.It should be cleaned once every 2-3 months.The procedure:

1.Turn off the unit and then cut off the power.

2. Open glass front panel.

3.Open the window of small box(Fig.24) and then slightly wipe the lens with cotton bar.(Fig.25)

4.Cover the window and glass front panel.

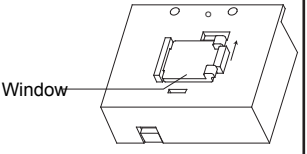


Fig.24

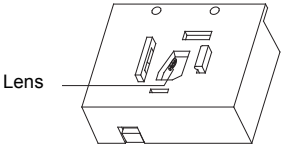


Fig.25